

Bem & Felt

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Health and Safety
District B

Mount Hope
West Virginia 25880

June 14, 1965

Memorandum

To: W. R. Park, Acting District Manager

From: J. L. Gilley, Mining Health and Safety Engineer

Subject: Coal Bump, Olga mines, Olga Coal Company, Coalwood,
McDowell County, West Virginia, April 26, 1965

On Monday, April 26, 1965, at 11:26 a.m., a bump of considerable magnitude occurred in the abandoned area of 2 west of the subject mine without personal injury or damage to equipment.

The origin or focus of the outburst was the large trapezoidal-shape pillar at the entrance to 5 right, which was also involved in an extensive bump in 2 west on November 24, 1964. (You may refer to the report on the investigation of the November 24 bump for general information on the physical conditions, etc. in the 2 west section.)

The attached mine print shows the specific area involved, the focus of the bump, locations where coal was expelled violently from pillars, areas where the floor was affected, and the extent of extraction when mining was discontinued in the area on March 23, 1965. The mine print also shows where mining was resumed in 2 west on March 24, 1965, and the extent of current development in barrier pillars between 4 and 6 lefts, 2 west, at the time of the bump on April 26.

A mine official notified the writer about the bump on the afternoon of April 27, 1965, and an investigation was made on the following day. All accessible areas in the bump area were examined, and the foreman and each member of his 8-man crew who were working in the left barrier 600 feet outby the focus of the bump were interrogated regarding their perceptions and observations on the occurrence.

From the interrogations, it was learned that at about 11:10 a.m., on April 26, the men heard a pillar bump in the general direction of 5 right 2 west abandoned area. Only sound waves from this bump were

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perceived in the active working area; however, about 15 minutes later, another bump, considerably greater in intensity and in amplitude-wave, occurred in the abandoned area. The stress relief from the second bump created compression and expansion waves of considerable amplitude that radiated in all directions; strong vibrations were set up in the roof, coal, and floor measures. The immediate roof in the active area, which reportedly comprises a thick bed of thinly laminated shales ranging up to 12 feet or more in thickness, continued to "work" or stress for several minutes following the bump. Also, some coal (mostly sloughed coal) was shaken, but was not expelled, from some of the pillars in the active workings. Dust was thrown into suspension, but no increase in methane liberation was detected.

Following the bump, the power was cut off immediately on the section, according to standard procedure, and the section foreman then notified the mine superintendent about the occurrence. All mining operations ceased until conditions were normal again in the active area and until thorough examinations for methane and other conditions were completed in the 2 west section.

The bump on April 26 was very violent, and its effects indicated that a large amount of energy was expended. However, the amplitude or intensity of this bump was recorded as 3.4 at the Seismological Station in Blacksburg, Virginia, compared with an intensity of 8.2 (2) for the outburst in 2 west on November 24, 1964.

This abrupt release of energy by the April 26 bump resulted in coal being expelled violently and in sufficient quantities from the ribs of the trapezoidal pillar and the immediate adjacent pillars to completely or partially fill the surrounding openings at the locations indicated in the attached print. Small amounts of roof were shaken down at 3 locations along the abandoned haulage roads. The floor was affected and upheaved along the abandoned section of the 2 west haulageway as shown on the print. The cave line where pillar mining terminated apparently remained unchanged since the area was abandoned on April 23.

From the attached print, it will be noted that the size of the pillars in the abandoned area of 2 west are comparatively large and therefore are capable of large load-bearing capacities, especially the large trapezoidal pillar at 5 right. The presence of these pillars and their relative locations evolve into the area becoming a zone of disturbance where stresses likely will be released intermittently by resultant movements in the future. From the attached map, you will note that current mining is in the barrier pillar opposite the abandoned area (enclosed by heavy line on mine map)

primarily involved in the bump; however, there are 7 rows of entry chain pillars intervening as a buffer zone. Extensive rock falls will prevent mining of the chain pillars that specifically separate current mining in the left barrier from the abandoned trapezoidal-shape pillar that was the focus of the April 26 bump.

/s/ J. L. Gilley

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